



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/197,643	11/23/1998	NAOKI KUWATA	Q52377	1520

7590 03/23/2004

SUGHRUE MION ZIN MACPEAK & SEAS  
2100 PENNSYLVANIA AVENUE N W  
WASHINGTON, DC 200373202

EXAMINER

TRAN, NHAN T

ART UNIT	PAPER NUMBER
----------	--------------

2615

DATE MAILED: 03/23/2004

29

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/197,643

Applicant(s)

KUWATA ET AL.

Examiner

Nhan T. Tran

Art Unit

2615

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1, 3-11 and 15-20 is/are allowed.
- 6) ☒ Claim(s) 12-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments, see paper No. 18, filed 12/29/2003, with respect to newly amended claim 1 and newly added claims 15, 18-20 have been fully considered and are persuasive. The rejection of claims 1 and 15 has been withdrawn and the above claims and all of their dependent claims have been allowed.

The Examiner notes that the Applicant has amended claims 12-14 only to remove the word "the" ahead of word "element," and thus have not changed the scope of the claim. Furthermore, the Applicant has neither submitted arguments regarding these claims to explain how the claims avoid the references or distinguish from them. Therefore, claims 12-14 are rejected based on the same ground as submitted in the previous Office Action.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 13 & 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Maenaka et al. (US 5,552,827).

Regarding claim 13, Maenaka et al disclose an image processing method (for color video camera 10) for performing image processing on image data consisting of dot-matrixed pixels, each of the dot-matrixed pixels having color element data from all element colors, the dot-matrixed pixels being output from an input device which generates the image data by obtaining image data by a single-plate solid state pickup device where a plurality of color filters of element color components are arranged in a mosaic in a nonuniform densities (see Figs. 2-9; col. 3, lines 26-38) and supplementing the image data by calculation to change the nonuniform densities to uniform densities, which are indicated in Maenaka et al's disclosure by detecting and correcting the false color pixel so that to change the pixel from a nonuniform density element in a pixel array to the uniform density element with respect to other pixels in the array (see col. 2, lines 4-7), the method comprising:

detecting a color-blur pixel (a false color pixel) in the image data (see Figs. 2, 8 & 9; col. 2, lines 4-7 & 16-20 and col. 4, lines 44-46);

performing image processing on pixels, each of the pixels having data from all the element colors (R, G, B; Fig. 14), the pixels being within a predetermined range (3x3) having the color-blur pixel as a reference pixel (the specific pixel) so as to reduce a color blur (see fig. 2-9, col. 9, lines 25-32 & col. 6, lines 35-39).

Regarding claim 14, see the analysis in claim 13.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fujimoto et al (US 5,712,924) in view of Ishihara et al (US 5,390,264).

Regarding claim 12, Fujimoto discloses an image processing apparatus performing image progressing on image data consisting of dot-matrixed pixels (Figs. 5 - 9), each of dot-matrixed pixels having color element data from all the element colors (R, G, B as shown in Fig. 14), the dot-matrixed pixels being output from an input device (scanner) which generates the image data by obtaining image data by a single-plate solid image pickup device (a CCD as shown in col. 1, lines 11-14) where a plurality of color filters of element color components are arranged in a mosaic in a nonuniform densities and supplementing the image data by calculation to change the nonuniform densities to uniform densities (an uniform pixel containing R, G and B as shown in Fig. 14; see abstract, col. 2, line 21 – col. 4, line 35), the apparatus comprising:

an inherent memory (at least a buffer) in which the image data being stored in order for the image processing apparatus to function as disclosed (Figs. 1-3);

a color blur pixel detection circuit (21) accessing the memory and detecting a position of a color blur pixel (a target pixel) based on the difference between a pixel of interest and its

Art Unit: 2615

peripheral pixel while sequentially moving the pixel of interest (see Fig. 3; col. 6, line 65 – col. 7, line 44 and note that the target pixel of reference must sequentially move throughout all pixels for the system to detect the edge as disclosed);

a color blur reduction processing circuit (22) reading data of pixels, each of the pixels having data from all the element colors (Fig. 14), the pixels being within a predetermined range having the pixel of interest detected as the color blur pixel as a reference pixel then performing calculation to reduce a color blur (see Fig. 3; col. 7, line 45 – col. 9, line 40).

Fujimoto does not explicitly disclose updating data of the pixel of interest stored in the memory with calculated data. However, such operation utilizing frame memory is well known in the art as taught by Ishihara in Fig. 1; col. 1, lines 9-12 & col. 4, lines 10-14.

Therefore, it would have been obvious to one of ordinary skill in the art to recognize that the image data would be updated after correction to maintain the image data with the most current updated data as conventional operation of an image processing apparatus.

#### *Allowable Subject Matter*

4. Claims 1, 3-11, 15-20 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding independent claim 1, the prior art of record fails to teach or suggest the combination of limitations required in claim 1 including the limitation of said color-blur pixel detection unit detects said color blur pixel based on change rate of element color intensity for low-density color filter, between closely adjacent pixels.

Art Unit: 2615

Regarding independent claims 9-11 & 15, the prior art of record fails to teach or suggest the combination of limitations as required in the claims including the limitations of said image processing unit performs smoothing processing on color difference components, obtained by subtracting luminance components from element color components of the pixels within the predetermined range having said color blur pixel as the reference pixel, and returns the smoothing processed components to initial element color components.

Regarding independent claims 18 - 20, the prior art of record fails to teach or suggest a color blur pixel detection unit detecting a pixel having a high  $\Delta RB$  change rate between adjacent pixels, wherein the pixel having the high  $\Delta RB$  change rate is regarded as a color blur pixel in the image data.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

Art Unit: 2615

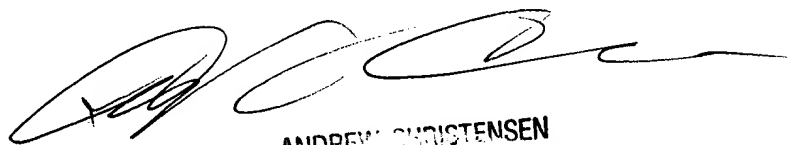
however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nhan T. Tran whose telephone number is (703) 605-4246. The examiner can normally be reached on Monday - Thursday, 8:00am - 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew B Christensen can be reached on (703) 308-9644. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

NT.



ANDREW CHRISTENSEN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600